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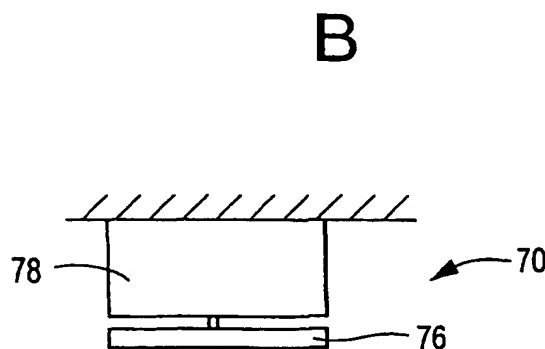
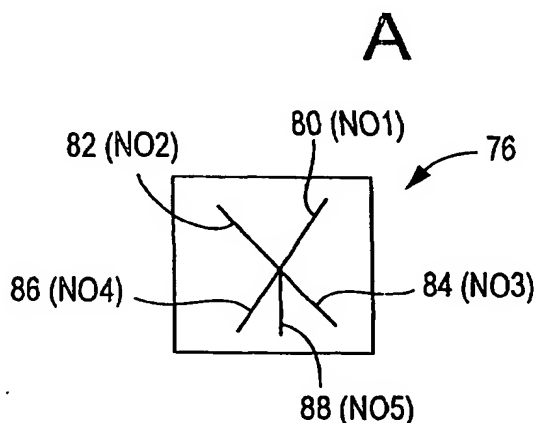
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[Continued on next page]

(54) Title: **TIRE-STATE OBTAINING APPARATUS**



(57) Abstract: A tire-state obtaining apparatus operable to detect the states of tires of wheels (10-18) and including (a) wheel-side devices (20-28) each including a transmitter device (42), and (b) a body-side device (30) including a receiver device (70, 200) operable to receive tire information (50) from the wheel-side devices, wherein the positions of the wheels from which sets of the tire information have been transmitted are determined on the basis of the condition in which the receiver device receives the tire information. The receiver device includes a plurality of antennas (80-88) oriented to receive the tire information from the respective wheel-side devices, and the wheel corresponding to the antenna having the highest intensity of reception of the tire information can be determined as the wheel from which the tire information has been transmitted, so that the antennas need not be located near the respective wheels, to identify the wheels.



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Published:

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INTERNATIONAL SEARCH REPORT

Internat Application No

PCT/JP 03/03485

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B60C23/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B60C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 340 930 B1 (LIN XING PING) 22 January 2002 (2002-01-22)	1
Y	column 2 -column 7	2-4, 11-18
A	figures 1-3	5-10
X	EP 1 059 177 A (CONTINENTAL AG) 13 December 2000 (2000-12-13)	1
Y	column 6 -column 12	2-4, 11-18
	figures 1-3	
X	DE 199 51 273 A (LUCAS VARITY GMBH) 7 June 2001 (2001-06-07)	24-26
	column 2 -column 7	
	figure 1	
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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- *E* earlier document but published on or after the international filing date
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- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

11 August 2003

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International Application No.

PCT/JP 03/03485

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 825 286 A (COULTHARD JOHN J) 20 October 1998 (1998-10-20) column 7 figures 4,5 -----	19-23

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JE 03485

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-18

Receiving-antenna-moving-device

2. Claims: 19-23

Communication-environment detection device

3. Claims: 24-26

vehicle-running-condition detection device

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP 03/03485

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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